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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,088	07/10/2006	Takaki Sugimoto	58902US006	2389
32692 7590 12/04/2009 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
EXAMINER HAUTH, GALEN H				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/595,088

Applicant(s)

SUGIMOTO, TAKAKI

Examiner

GALEN HAUTH

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Acknowledgment is made to applicant's amendment of claim 1, cancellation of claims 12-18, and addition of claim 22. No new matter has been added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Audsley (PN 4929403).

- a. With regards to claim 1, Audsley teaches a flexible mold (abstract) supported by a non woven web of plastic (col 11 ln 63-68, col 12 ln 3-6) in which the mold is made from an acrylate capped oligomer, at least one reactive diluent, and a photoinitiator (col 3 ln 39-44). Audsley teaches using urethane acrylate oligomer (col 5 ln 27) and methacryl monomer for the reactive diluent (col 6 ln 61-65). Audsley teaches using acrylonitrile (col 7 ln 8, listed in applicant's specification as an example of an acryl monomer) and epoxy, polyether, and urethane acrylates for the oligomer (col 5 ln 23-28, listed in applicant's specification as an example of a suitable acryl oligomer). Although Audsley does not explicitly state a glass transition temperature, the materials of Audsley would inherently possess a glass transition temperature of no greater than zero degrees

Celsius. **NOTE:** Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on "inherency" under 35 USC § 102, on prima facie obviousness" under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products." In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).

- b. With regards to claim 2, Audsley teaches using monofunctional methacryl monomers and difunctional monomers (col 6 ln 28-29).
- c. With regards to claims 3 and 4, as discussed in the rejection of claim 1 above, given the similarities between applicant's claimed components and the components of Audsley, the components would inherently possess the claimed glass transition temperature range despite an explicit teaching in Audsley.
- d. With regards to claim 5, Audsley teaches using 37% oligomer (col 13 Example 1).
- e. With regards to claim 7, Audsley teaches using UV light (col 11 ln 17).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Audsley (PN 4929403) as applied to claim 1 above.

a. With regards to claim 9, Audsley, as applied to claim 1 above, teaches a flexible mold from a polymerizable material, but does not explicitly teach a viscosity of the composition. Audsley teaches a similar composition with similar parts per weight of components, as seen in the rejection of claims 1 and 5, and the inclusion of a plasticizer to reduce viscosity (col 8 ln 30-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a viscosity of 10 to 35,000 centipoise as viscosity is a result effective variable of a similar composition, effecting the application of the material to a surface as taught by Audsley.

7. Claims 6, 8, 10, 11, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Audsley (PN 4929403) as applied to claim 1 above, and further in view of Kikuchi et al. (Pub No 2003/0022585).

- a. With regards to claim 6, Audsley, as applied to claim 1 above, teaches a flexible mold with a supporting element, but does not teach a glass transition temperature of the supporting element.
- b. Kikuchi teaches a flexible mold made from urethane acrylate oligomer (§ 0046) with a support film of polyethylene terephthalate (§ 0045). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polyethylene terephthalate film as a support element in the mold of Audsley, because Kikuchi teaches that using such film is advantageous for maintaining dimensional accuracy and is transparent to promote UV curing (§ 0045). While Kikuchi does not explicitly state the glass transition temperature of the polyethylene terephthalate film, the film is a similar material to applicants suggested film (applicant lists polyethylene terephthalate in claim 10) and would therefor inherently possess the claimed glass transition temperature.
- c. With regards to claim 8, Audsley does not teach that the support layer and shape imparting layer are transparent.
- d. Kikuchi teaches use of the flexible mold for forming ribs using a UV curing process (§ 0066). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use transparent materials to allow for the mold to be used in UV curing processes as taught by Kikuchi.
- e. With regards to claim 10, Audsley, as applied to claim 1 above, teaches a flexible mold with a supporting element, but does not teach the claimed materials.

f. Kikuchi teaches a flexible mold made from urethane acrylate oligomer (§ 0046) with a support film of polyethylene terephthalate (§ 0045). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polyethylene terephthalate film as a support element in the mold of Audsley, because Kikuchi teaches that using such film is advantageous for maintaining dimensional accuracy and is transparent to promote UV curing (§ 0045).

g. With regards to claim 11, Audsley, as applied to claim 1 above, teaches a flexible mold with a supporting element, but does not teach the thickness of the support materials.

h. Kikuchi teaches a flexible mold made from urethane acrylate oligomer (§ 0046) with a support film of polyethylene terephthalate (§ 0045). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polyethylene terephthalate film as a support element in the mold of Audsley, because Kikuchi teaches that using such film is advantageous for maintaining dimensional accuracy and is transparent to promote UV curing (§ 0045). Kikuchi teaches using a 50 micrometer support film of polyethylene terephthalate (§ 0090).

i. With regards to claim 22, Audsley teaches the use of the mold for finely detailed objects (abstract), but does not teach barrier rib precursors.

j. Kikuchi teaches that the mold is used for barrier rib precursors (abstract). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to use the mold of Audsley to mold barrier rib precursors as taught by Kikuchi, because both relate to flexible molds for finely detailed objects presenting a reasonable expectation of success.

Response to Arguments

8. Applicant's arguments filed 08/05/2009 have been fully considered but they are not persuasive.

a. With regards to applicant's arguments that the composition of Audsley would not inherently possess a glass transition temperature of less than zero degrees Celsius, this argument is not persuasive. As described above, Audsley teaches using acrylonitrile (col 7 ln 8, listed in applicant's specification as an example of an acryl monomer) and epoxy, polyether, and urethane acrylates for the oligomer (col 5 ln 23-28, listed in applicant's specification as an example of a suitable acryl oligomer). Additionally, Audsley teaches using Uvithane 782 from Morton Thiokol Chemical Division as the acrylate-capped polyester urethane oligomer (Examples 1 and 2), which as seen in Broer (US 4741597) is an oligomer whose glass transition temperature is -35 degrees Celsius (col 4 ln 3-9). The inclusion of this oligomer with plasticizer (a compound which lowers the glass transition temperature of polymers) presents evidence that the teachings of Audsley produce a composition whose glass transition temperature is lower than zero degrees Celsius. Without a showing that the compositions taught by Audsley in fact have a glass transition temperature of less than zero degrees Celsius, the materials of Audsley would inherently possess a glass transition

temperature of no greater than zero degrees Celsius. **NOTE:** Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on "inherency" under 35 USC § 102, on prima facie obviousness" under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products." In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).

b. With regards to applicant's arguments that the combination of Audsley in view of Kikuchi is an improper combination due to the failure of the mold, this argument is not persuasive. Audsley already teaches the inclusion of support members within the mold (col 11 ln 63-65) and the arguments presented that the support of Kikuchi would separate from the mold during use are not supported by any objective evidence.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791